To: Dan Meyer

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STATE OF WASHINGTON
ENERGY FACILITY SITE EVALUATION COUNCIL
PO Box 43172 • Olympia, Washington 98504-3172

November 13, 2001

Mr. L. John Iani
Acting Regional Administrator
U.S. EPA Region 10
1200 Sixth Avenue,
Seattle, WA 98101-1128

Subject: Satsop Combustion Turbine Project - Final Approval Notice of Construction/ Prevention of Significant Deterioration Permit No. EFSEC/2001-01

Dear Mr. Iani:

On October 22, 2001, the Energy Facility Site Evaluation Council (EFSEC or Council) voted to approve the final Prevention of Significant Deterioration/Notice of Construction Permit No. EFSEC/2001-01 for the Satsop Combustion Turbine Project, sited in Grays Harbor County, Washington. The final permit was subsequently signed by authorized representatives of the US Environmental Protection Agency Region 10, the EFSEC Chair, and EFSEC's permit reviewer.

Please find attached a copy of the signed permit for US EPA Region 10 records, as well as a copy of the responsiveness summary that was prepared to address the written and oral comments received by the Council in consideration of the draft revised permit.

On behalf of the Council, I would like to extend our appreciation for the cooperation received from US EPA Region 10's staff on the completion of this permit revision. Thank you for your continued cooperation.

Please do not hesitate to contact me at (360) 956-2047 if you have any questions regarding this matter.

Sincerely,

Irina Makarow
Siting Manager

(360) 956-2121 Telefax (360) 956-2158

Enclosure

cc: Dan Meyer, EPA Region 10 Office of Air Quality
Christine Lee, EPA Region 10 WA Operations Office
Alex Piliaris, Ecology Air Quality Program

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ENERGY FACILITY SITE EVALUATION COUNCIL
P.O. BOX 43172
OLYMPIA, WASHINGTON 98504-3172

IN THE MATTER OF:	]	NO. EFSEC/2001-01
Satsop Combustion Turbine Project	]	
Electrical Generating Facility	]	FINAL APPROVAL
Elma, Washington	]	NOTICE OF CONSTRUCTION
	]	AND PREVENTION OF
	]	SIGNIFICANT DETERIORATION

Pursuant to the Energy Facility Site Evaluation Council (EFSEC) Permit Regulations for Air Pollution Sources (Washington Administrative Code 463-39), regulation for air permit applications (Washington Administrative Code 463-42-385), the Washington Department of Ecology (Ecology) regulations for new source review (Washington Administrative Code 173-400-110 and Chapter 174-460 WAC), the federal Prevention of Significant Deterioration regulations (40 CFR 52.21), and based upon the complete Notice of Construction Application (NOC), submitted by Duke Energy Grays Harbor, LLC., and Energy Northwest on April 23, 2001, the Energy Facility Site Evaluation Council Resolution No. 298 dated April 13, 2001, the Administrative Order on Consent, Docket No. CAA-10-2001-0097, between the Satsop CT Project and the U.S. Environmental Protection Agency, Region 10, dated March 30, 2001, and the technical analysis performed by Ecology for EFSEC, EFSEC now finds the following:

FINDINGS

1. Duke Energy Grays Harbor, LLC., and Energy Northwest (jointly "Duke Energy") have applied to construct the Satsop Combustion Turbine Project which is to be located near Elma, Washington. The proposed 650 megawatt (MW) project consists of two (2) separate, combined cycle, natural gas fired power generation facilities, each rated at 175 Megawatts (MW) and one steam turbine generator (STG) rated at 300 Megawatts (MW). The project will consist of the following major components:

   1.1. Two General Electric gas combustion turbines (GE 7FA);
   1.2 Two heat recovery steam generators (HRSG) with supplementary duct burners;
   1.3. One steam turbine generator (STG);
   1.4. One auxiliary boiler;
   1.5. One forced draft cooling tower system;

These stationary sources may be built separately or simultaneously. Requirements for timing of separate construction shall be done in accordance with Approval Condition 25. They may be operated independently.

2. Duke Energy's NOC/PSD application for the proposed project was determined to be complete on August 1, 2001, after Ecology's review of additional information submitted by Duke Energy.

3. The project is subject to permitting requirements under the Federal requirements of 40 CFR 52.21 because it is one of 28 listed industries that becomes a "major source," when emitting more than 100 tons per year of any regulated pollutant. The Satsop CT Project has potential to emit significant quantities of nitrogen oxides, carbon monoxide, sulfur dioxide, sulfuric acid mist, particulate matter, and volatile organic compounds above Significant Emission Rate thresholds.

4. The project will use natural gas. No other fuel will be used as backup during periods of natural gas curtailment.

5. The site of the proposed project is within an area that is in attainment with regard to all pollutants regulated by the National Ambient Air Quality Standards (NAAQS) and state air quality standards. The site is approximately 60 kilometers from the nearest Class I Area, Olympic National Park.

6. The project is subject to new source review requirements under Chapter 173-400 WAC, Chapter 173-460 WAC, 40 CFR 52.21, 40 CFR 60.40b, 40 CFR 60.330; to emission monitoring requirements under RCW 70.94, Chapter 173-400 WAC, 40 CFR 60 Appendices A, B, and F, and 40 CFR 75; and to gas fuel monitoring requirements under 40 CFR 60.334(b)(2).

7. Best available control technology (BACT) as required under WAC 173-113(2) and toxic best available control technology (T-BACT) as required under WAC 173-460-040(4) will be used for the control of all air pollutants which will be emitted by the proposed project.

8. The facility will have the potential to emit up to 264 tons per year of oxides of nitrogen (NO_X).

9. The facility will have the potential to emit up to 424 tons per year of carbon monoxide (CO).

10. The facility will have the potential to emit up to 10 tons per year of sulfur dioxide (SO_2).

11. The facility will have the potential to emit up to 80 tons per year of volatile organic compounds (VOCs).

12. The facility will have the potential to emit up to 115 tons per year of filterable particulate matter less than or equal to 10 microns aerodynamic equivalent diameter (PM_{10}).

13. The facility will have the potential to emit up to 11.4 tons per year of sulfuric acid mist.

14. The facility will have the potential to emit up to 121 tons per year of ammonia.

15. Allowable emissions from the new emissions units will not cause or contribute to air pollution in violation of:

    15.1. Any state or national ambient air quality standard;

    15.2. Any applicable maximum allowable increase (PSD increment) over the baseline ambient concentration.

16. Ambient Impact Analysis indicates that there will be no significant impacts resulting from pollutant deposition on soils and vegetation in either the Mt. Rainier or Olympic National Parks.

17. Ambient Impact Analysis indicates that during natural gas firing, no significant degradation of regional visibility or vistas from National Parks will occur due to this project.

18. No significant effect on industrial, commercial, or residential growth in the Elma area is anticipated due to the project.

19. EFSEC finds that all requirements for new source review (NSR) and PSD are satisfied and that as approved below, the new emissions units comply with all applicable federal new source performance standards. Approval of the NOC application is granted subject to the following conditions.

APPROVAL CONDITIONS

1. The combustion turbines (PGUs) shall be fueled only by pipeline quality natural gas.

2. NO_X emissions from each power generating unit (PGU) exhaust stack of the project shall not exceed of the following:

   2.1. 21.7 pounds per hour (1-hour average) with duct firing;

   2.2. 16.8 pounds per hour (1-hour average) without duct firing;

   2.3. 2.5 ppmvd (parts per million on a dry volumetric basis) over (1-hr average) when corrected to 15.0 percent oxygen (O_2).

   Initial compliance shall be determined in accordance with 40 CFR Subpart GG and EPA Reference Method 20, except that the instrument span shall be set between zero and 25 ppm. NO_X and O_2 concentrations shall be measured and recorded by a continuous emission monitoring system (CEMS) which meets the requirements of Approval Condition 17.1 Such CEMS shall be used to determine compliance with this Condition.

3. Ammonia (free NH_3 and ammonium sulfate measured as NH_3) emissions from each PGU exhaust stack of the project shall not exceed 5.0 ppmvd on a (1-hour average) corrected to 15.0 percent oxygen. NH_3 emissions from each PGU exhaust stack shall not exceed 16.1 lb/hr (1-hour average).

Initial compliance for each PGU shall be determined by Bay Area Air Quality Management District Source Test Procedure ST-1B, "Ammonia, Integrated Sampling," or an equivalent method approved in advance by EFSEC. NH_3 emissions from each PGU exhaust stack shall be measured and recorded by a continuous emission monitoring system (CEMS) which meets the requirements of Approval Condition 17.2. Duke Energy may propose alternative means for continuous assessment and reporting of NH_3 emissions for approval by the Council. Any proposed alternative NH_3 reporting shall be at a minimum equivalent to a continuous emission monitoring system (CEMS) which meets the requirements of Condition 17.

The SCR catalyst shall be repaired or replaced at the next scheduled outage following a time period when ammonia slip can no longer be maintained at or below 4.5 ppmvd corrected to 15.0 percent oxygen. The outage shall be no later than 12 months after ammonia slip exceeds 4.5 ppmvd corrected to 15.0 percent oxygen. The permit limitations outlined in this section shall not apply to startup, shutdown and scheduled maintenance conditions.

4. CO emissions from each PGU exhaust stack of the project shall not exceed 2 ppmvd corrected to 15.0 percent oxygen and 10.6 lb/hr at 100% load.

CO emissions from each auxiliary boiler shall not exceed 50.0 ppmvd (1- hour average) corrected to 3.0 percent oxygen, and 1.07 lb/hr.

Initial compliance for each PGU and boiler shall be determined by EPA Reference Method 10 or an equivalent method agreed to in advance by the EFSEC. The span and linearity calibration gas concentrations in Method 10 shall be appropriate to the CO concentration limits specified in this condition. CO emissions from each PGU exhaust stack shall be measured and recorded by a CEMS which meets the requirements of Approval Condition 17.3. Such CEMS shall be used to determine compliance with this Condition.

5. SO_2 emissions from each PGU exhaust stack shall not exceed 0.11 ppmvd over a one hour average when corrected to 15.0 percent oxygen. SO2 emissions from each PGU exhaust stack shall not exceed 1.3 pounds per hour (1-hour average). Sulfur dioxide from auxiliary boiler exhaust stack shall not exceed 0.03 lb/hr (1-hour average).

Initial compliance for each PGU and boiler shall be determined by EPA Reference Method 8, or an equivalent method approved in advance by EFSEC. Duke Energy shall conduct source testing for sulfur dioxide once per month for the first year of operation at each PGU exhaust stack. If test results demonstrate compliance with the permit conditions, subsequent stack testing for sulfur dioxide can be reduced to once per year. Duke Energy shall report to EFSEC on a monthly basis the quantity and average sulfur content of pipeline quality natural gas burned at each PGU unit as substantiated by purchase records and vendor's report. Fuel sulfur determination shall follow procedures outlined in 40 CFR 60.335(d) and (e) or an alternative method approved by EPA and submitted to EFSEC.

6. Sulfuric acid (H_2SO_4) emissions from each PGU exhaust stack shall not exceed 1.3 lb/hr. Initial compliance with the sulfuric acid emissions limits shall be determined by EPA Reference Method 8, or an equivalent method approved by EFSEC. Duke Energy shall conduct source testing for sulfuric acid mist once per month for the first year of operation at each exhaust stack. If test results demonstrate compliance with the permit conditions, subsequent stack testing for sulfuric acid mist can be reduced to once per year.

7. Volatile organic compound emissions (VOCs) from each PGU exhaust stack shall not exceed 8.4 pounds per hour (1-hour average) and VOC emissions from auxiliary boiler shall not exceed 0.469 pounds per hour (1-hour average).

Initial compliance for each PGU and boiler shall be determined by EPA Reference Method 25A or 25B, or an equivalent method agreed to in advance by EFSEC.

8. PM10 emissions from each PGU exhaust stack shall not exceed 391.2 pounds per day (filterable

only) PM10 emissions from each PGU exhaust stack shall not exceed 0.0025 gr/dscf. PM10 emissions from auxiliary boiler exhaust stack shall not exceed 7.0 pounds per day.

Initial compliance for each PGU and the boiler (exhaust stack) shall be determined by either EPA Reference Methods 5, 201, or 201A, or an equivalent method agreed to in advance by EFSEC. In conjunction with the above test, EPA Reference method 202 will also be conducted and the results reported separately.

9. Opacity from each PGU exhaust stack of the project shall not exceed 5 percent over a six minute average as measured by EPA Reference Method 9, or an equivalent method approved in advanced by EFSEC. A certified opacity reader shall read and record the opacity daily if Method 9 is used.

10. With the exception of PM_{10}, SO_2, H_2SO_4, NO_X, CO, and VOCs, the net emissions increase of any pollutant regulated under the Federal Clean Air Act shall be less than the significant levels in 40 CFR 52.21(b)(23)(i).

11. Plantwide emissions shall not exceed the following on an annual total rolled monthly:

PLANTWIDE EMISSIONS*

Pollutant	PGU PER STACK tons/yr	Auxiliary Boiler Tons/yr	Cooling Tower Tons/yr	Total Potential To emit tons/yr
NOx	132	0.26	--	264
SO2	5.0	0.008	--	10
H2SO4	5.7	--	--	11.4
PM	55.2	0.07	4.51	115
CO	212	0.27	--	424
VOC	40	0.12	--	80

* Includes the excess emissions from startup and shutdown events.

12. The number of startup and shutdown shall be limited to 130 events for each PGU unit. Emissions resulting from these startup and shutdown events shall be considered and reported in accordance with approval conditions outlined below. The following conditions apply to startup and shutdown periods. The startup period ends when the earlier of the two operating events occurs:

12.1. The proper operating temperature of oxidation and SCR catalysts has been achieved and all six Dry-Low-NOx burners, per PGU, are operational; or

12.2. 4 hours maximum for both turbines have elapsed since fuel was first combusted in the first turbine.

The proper operating temperature of the oxidation and SCR catalysts and the point at which all six Dry-Low-NOx burners are operational shall be determined from the Manufacturer's design specifications and must be reported in writing to EFSEC before commercial operation of the combustion turbines. The number of startup and shutdown are limited to 130 events per year per PGU, with a maximum of two startups per turbine per 24 hour period. Compliance with short-term emission limits (during startup and shutdown periods) shall be determined using manufacturer's emission factors or source test data. Where source test data and Manufacturer's emission factors conflict, source test data shall be used to determine compliance.

Compliance with the plantwide annual emissions per PGU exhaust stack shall be determined using a combination of source test data, CEM data and emission factors. Annual emissions per PGU shall include emissions generated during startup and shutdown periods. Source testing is to be conducted at 100% load with duct firing. The following emission factors can be used for calculating the emissions generated during startup and shutdown periods until new source test data is developed by Duke Energy and approved by EFSEC.

Pollutant	Emission Factor (both turbines)
Nitrogen oxides	1536 lb/4-hr (average)
Carbon monoxide	5288 lb/4-hr (average)

Volatile organic compounds 354 lb/4-hr (average)

13. Duct firing system: Duct firing shall not exceed 6760 hours per year within each power generating unit (each combustion turbine). A totalizer or metering device will be installed to record hours of operation for each duct firing system, or an equivalent method approved in advance by EFSEC.

14. Within 180 days after initial start-up of the first combustion turbine, Duke Energy shall conduct performance tests for NO_X, ammonia, SO_2, opacity, VOC, CO, PM_{10} and H_2SO_4 on each PGU and boiler, to be performed by an independent testing firm. A test plan shall be submitted to EFSEC for approval at least 30 days prior to the testing. Initial start-up for a combustion turbine is defined as the time when the first electricity from the PGU and the associated steam turbine generator is delivered to the electrical power grid.

15 Sampling ports and platforms shall be provided on each stack, after the final pollution control device. The ports shall meet the requirements of 40 CFR, Part 60, Appendix A, Method 20.

16. Adequate permanent and safe access to the test ports shall be provided. Other arrangements may be acceptable if approved by EFSEC prior to installation.

17. Continuous Emission Monitoring Systems

17.1 CEMS for NO_X, and O_2 compliance shall meet the requirements contained in 40 CFR 75, Emissions Monitoring.

17.2 CEMS for ammonia shall meet the requirements contained in 40 CFR, Part 63, Appendix A and 40 CFR, Part 60, Appendix F, Quality Assurance Procedures, or other EFSEC- approved performance specifications and quality assurance procedures.

17.3 Continuous emission monitoring systems (CEMS) for CO, shall, at a minimum meet the requirements contained in 40 CFR, Part 60, Appendix B, Performance

Specifications and in 40 CFR, Part 60, Appendix F, Quality Assurance Procedures.

18. Compliance testing shall be performed for PM_{10} and VOCs from each PGU and boiler exhaust stack annually for the first three years following initial startup, and once every 3 years thereafter as long as compliance continues to be demonstrated. Source testing for these parameters is to coincide with the Relative Accuracy Test Audit required for each installed CEMS.

19. CEMS and process data shall be reported in written (or electronic if permitted by the EFSEC) form to the authorized representative of EFSEC and to the EPA Region X Office of Air Quality monthly (unless a different testing and reporting schedule has been approved by EFSEC) within thirty days of the end of each calendar month.

20. The format of the reporting described in Condition 19 shall match that required by EPA for Demonstrating compliance with the Title IV Acid Rain program reporting requirements. Pollutants not covered by that format shall be reported in a format approved by EFSEC that shall include at least the following:

20.1 Process or control equipment operating parameters.

20.2 The hourly maximum and average concentration, in the units of the standards, for each pollutant monitored.

20.3 The duration and nature of any monitor down-time.

20.4 Results of any required monitor audits or accuracy checks.

20.5 Results of any required stack tests.

20.6 The above data shall be retained at the Satsop CT Project site for a period of five years.

21. For each occurrence of monitored emissions in excess of the standard, the monthly emissions report (per Approval Condition 19 and 20) shall include the following:

21.1 For parameters subject to monitoring and reporting under the Title IV, Acid Rain program, the reporting requirements in that program shall govern excess emissions report content.

21.2 For all other pollutants:

21.2.1 The time of the occurrence.

21.2.2 Magnitude of the emission or process parameters excess.

21.2.3 The duration of the excess.

21.2.4 The probable cause.

21.2.5 Corrective actions taken or planned.

21.2.6 Any other agency contacted.

22. Operating and maintenance manuals for all equipment that has the potential to affect emissions to the atmosphere shall be developed and followed. Copies of the manuals shall be available to EFSEC or the authorized representative of EFSEC. Emissions that result from a failure to follow the requirements of the manuals may be considered proof that the equipment was not properly operated and maintained.

23. Operation of the equipment that has the potential to affect the quantity and nature of emissions to the atmosphere must be conducted in compliance with all data and specifications submitted as part of the PSD/NOC application unless otherwise approved by EFSEC.

24. This approval shall become void if construction of the project is not commenced within 18 months after receipt of final approval, or if construction of the facility is discontinued for a period of 18 months, unless EFSEC extends the 18 month period upon a satisfactory showing that an extension is justified , pursuant to 40 CFR 52.1 (r) (2) and applicable EPA guidance.

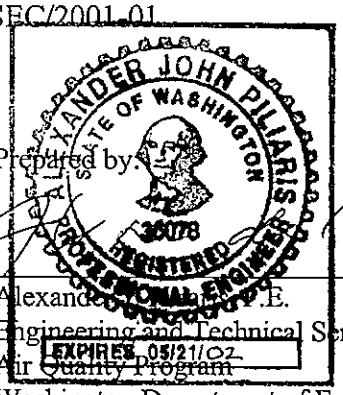
25. Any activity which is undertaken by Duke Energy or others, in a manner which is inconsistent with the application and this determination, shall be subject to EFSEC enforcement under applicable regulations. Nothing in this determination shall be construed so as to relieve Duke Energy of its

obligations under any state, local, or federal laws or regulations.

26. Duke Energy shall notify EFSEC in writing at least thirty days prior to initial start-up of the project.

27. Access to the source by EFSEC, the authorized representative of EFSEC, or the U.S. Environmental Protection Agency (EPA), shall be permitted upon request for the purpose of compliance assurance inspections. Failure to allow access is grounds for action under the Federal Clean Air Act or the Washington Clean Air Act.

Prepared by:



10/23/2001

Alexander J. Piliaris, P.E.
Engineering and Technical Services
Air Quality Program
Washington Department of Ecology

Date

Approved by:

10-23-01

James O. Luce
EFSEC Chair
Energy Facility Site Evaluation Council

Date

Approved by:

11/2/01

Barbara McAllister
Director
Office of Air Quality
U.S. Environmental Protection Agency
Region 10

Date

Washington State

ENERGY FACILITY SITE EVALUATION COUNCIL

Satsop Combustion Turbine Project

Prevention of Significant Deterioration/Notice of Construction
Permit No. EFSEC/2001-01

RESPONSIVENESS SUMMARY

October 23, 2001

Note: Some of the comments have been paraphrased or generalized to allow direct responses to the concerns expressed. Copies of the original comment letters are available upon request from the Energy Facility Site Evaluation Council

TABLE OF CONTENTS

1 Background

In April 2001, Energy Northwest and Duke Energy Grays Harbor, LLC, (jointly "Duke Energy") submitted a joint request to the Energy Facility Site Evaluation Council (EFSEC or Council) for issuance of a Prevention of Significant Deterioration/Notice of Construction (PSD/NOC) permit for the Satsop Combustion Turbine Project, sited near Elma, in Grays Harbor County, Washington.

A preliminary approval of PSD/NOC permit No. EFSEC/2001-01 was issued for public comment on August 28, 2001. Public notice of the comment period and of a public hearing on this matter was performed by publication of a legal notice in the Aberdeen Daily World (East County Edition) (9/2/01), The Olympian (9/14/01), and the Montesano Vidette (8/30/01), and by mailing to EFSEC's interested persons list for this project, and EFSEC's minutes and agendas list on (August 28, 2001). Copies of the draft permit and associated fact sheet were made available for public reference in the W. H. Abel Memorial Library in Montesano, the EFSEC offices in Olympia, and Ecology's Offices in Lacey, Washington, on EFSEC's web site and to any interested person upon request.

The public comment period closed on October 4, 2001, at the adjournment of the public comment hearing held at the Elma High School Commons, in Elma, Washington.

The Council received one written comment, and seven oral comments responding to the preliminary approval[1]. Six oral comments were received in support of the approval, without any requests for revisions to the draft permit. The following pages summarize the comments received and indicate how the concerns expressed are addressed in the final permit issued by the Council.

2 Summary of Comments Received

2.1 Written Comments

Comment: ***See Response:***

In a written comment dated September 28, 2001, Marie Piper of Cascade Environmental Management, on behalf of Duke Energy, requested modification to the draft approval as follows:

Approval condition 12 – Startup-shutdown conditions: Response 3.1

12 The number of startup and shutdown shall be limited to 130 events for <u>each</u> ~~both~~ PGU units. Emissions resulting from these startup and shutdown events shall be considered and reported in accordance with approval conditions outlined below. The following conditions apply to startup and shutdown periods. The startup period ends when the earlier of the two operating events occurs:

12.1. The proper operating temperature of oxidation and SCR catalysts has been achieved and <u>all six Dry-Low-NOx burners, per PGU, are operational</u>; or

12.2. <u>4</u> ~~2~~ hours <u>maximum</u> ~~average~~ per turbine have elapsed since fuel was first combusted in the <u>first</u> turbine.

[1] Several of the citizens who commented orally also submitted written versions of their testimony.

Comment: *See Response:*

The proper operating temperature of the oxidation and SCR catalysts and the point at which all six Dry Low-NOx burners are operational shall be determined from the Manufacturer's design specifications and must be reported in writing to EFSEC before commercial operation of the combustion turbines. The number of startup and shutdown are limited to 130 events per year per PGU, with a maximum of two startups per turbine per 24 hour period. Compliance with short-term emission limits (during startup and shutdown periods) shall be determined using manufacturer's emission factors or source test data. Where source test data and Manufacturer's emission factors conflict, source test data shall be used to determine compliance. Response 3.1

Compliance with the plant wide annual emissions per PGU exhaust stack shall be determined using a combination of source test data, CEM data and emission factors. Annual emissions per PGU shall include emissions generated during startup and shutdown periods. Source testing is to be conducted at 100% load with duct firing. The following emission factors ~~(assuming full load)~~ can be used for calculating the emissions generated during startup and shutdown periods until new source test data is developed by Duke Energy and approved by EFSEC.

Approval Condition 14 Response 3.2

Marie Piper requests that "Duke Energy Grays Harbor, LLC, and Energy Northwest" replace "Satsop Generation Facility".

Approval condition 20.4 Response 3.3

Modify to read: "Results of any required monitor audits or accuracy checks."

2.2 *Oral Comments of October 4, 2001*

Comment: *See Response:*

Stephanie Martinez (Jones), and Gregory Jones[2]:

1) How can the Satsop CT Project have no significant impact on the community if it has the potential to emit quantities of criteria pollutants well above the significant emission rate threshold? Response 3.5
2) Disclose how much water vapor emission or drift droplets can be expected in tons per year from the Satsop CT Project and the anticipated effect on the community, including the deposition of such drift droplets or water vapor form the emission plume. Response 3.6
3) Disclose the impacts on visibility in Class II areas when the CT is operating. Response 3.7
4) Require monthly compliance testing for all regulated emissions to guarantee air quality standards and public safety. Response 3.8

[2] The following speakers presented a written version of their comments in support of their testimony: Martinez (on behalf of Stephanie and Gregory Jones), Rudrud, Franklin, and Meister. The summaries in Section 3.2 include concerns raised both orally and in their written statements.

Comment:	*See Response:*
Sherry Rudrud:	
1) Were the emissions from the Boise Cascade Marathon plant considered in the preparation of the Satsop CT PSD permit?	Response 3.4
2) Who will monitor emissions of criteria pollutants, and how often will state or federal inspectors verify the readings.	Response 3.8
3) What steps will be taken to prevent spilled ammonia from reaching the ground water or he Chehalis River?	Response 3.11
4) How can over 100 tons per year of pollutants per year result in "no significant ambient air quality impact"?	Response 3.5
5) What is the impact of deposition of ammonia and nitrogen deposition on endangered salmon in the Chehalis River?	Response 3.10
Teri J. Franklin:	
1) In order to mitigate for the federally and state regulated emissions resulting from the Satsop CT project, local electric rates should be reduced for residences in Grays Harbor County. Such mitigation should be included in the PSD permit.	Response 3.9
Dean Schwickerath:	
1) How was the PSD permitting coordinated with other federal, state and local agencies to take into account existing sources and background emissions, as well as the permitting of similar types of industries?	Response 3.12
2) Will this facility meet permitting requirements during stagnant winter meteorological conditions? If not, will the facility be shut down?	Response 3.13
3) What is the impact of both the Satsop CT Project and the Boise Cascade Marathon facility?	Response 3.4
Diane Schwickerath:	
1) What is the impact of the Boise Cascade facility in conjunction with the Satsop CT Project on air pollutant emissions in the local area?	Response 3.4
Gary Holt:	
1) Where will the monitoring stations be located for the air quality monitoring?	Response 3.8
2) Does the permit take into account plume and dispersion modeling, and was that modeling available for public review?	Response 3.14
3) Was the Boise Cascade facility considered in the permitting of the Satsop CT Project?	Response 3.4
The following persons made comments in support of the draft permit issued for comment, and did not request any changes to permit conditions or language: Frank Moses, Diane Ellison, Tami Garrow, Bob Beerbower, Richard Lovely, Curt Deal.	Not Applicable

3 Responses to Comments

3.1 Approval Condition 12 – Startup and Shutdown Conditions (Piper)

Condition 12 with regards to number startup/shutdown events:

The emission rates and concentrations, and derived permit conditions, presented by Duke Energy in their application, assumed that the 130 events applied to each PGU, not both. The correction is warranted.

Condition 12.1 and 12.2, with regards to language about all six dry low NOx burners being operational at the end of startup:

The data and analyses presented in the application submitted by Duke Energy assumed that all six Dry-Low NOx burners, per PGU would be operational at the end of the startup period. This information should have been included in the permit condition, and has been added.

Condition 12.2:

The Condition has been modified to read: " 4 hours maximum for both turbines have elapsed since fuel was first combusted in the first turbine."

3.2 Approval Condition 14 (Piper)

Approval Condition 14 has been corrected in the final permit. "Satsop Generation Facility" will be replaced by the term "Duke Energy". Finding 1 of the permit indicates that Duke Energy Grays Harbor, L.L.C., and Energy Northwest are jointly referred to as "Duke Energy".

3.3 Approval Condition 20.4 (Piper)

The word "required" was accidentally omitted from the draft permit, and has been included in the final approval.

3.4 Impact and consideration of the Boise Cascade Marathon facility emissions in the PSD permitting of the Satsop CT Project (Rudrud, Schwickerath, Schwickerath, Holt, Meister)

According to the requirements of U.S. Environmental Protection Agency (EPA) regulations codified in the Code of Federal Regulations (CFR) Part 52.21, and EPA's PSD guidance manual, the permitting agency (EFSEC in the case of the Satsop CT Project) determines if it is necessary to conduct pre-construction monitoring of background ambient air quality for a proposed major stationary source. If the facility's modeled air quality impact is above the de-minimis monitoring levels (different for each pollutant) then at least one year of ambient air quality data must be collected. Additionally, if there is no existing and acceptable meteorological data suitable for use at the site, then a year of pre-permit application meteorological data is required. For this proposal, it was determined that no additional pre-application ambient air quality and meteorological data were required.

As required by state and federal regulations under PSD review, the Satsop CT Project modeled its emissions to determine whether or not impacts to ambient air quality concentrations would exceed the "significant impact levels" established by EPA. Under PSD regulations, only facilities with impacts in *excess* of significant impact levels are required to include the impacts of other facilities within the significant impact zone. The modeling for the current permit approval demonstrated that the impacts of the Satsop CT Project would be less than EPA's significant impact levels. It was in fact determined that the Satsop CT Project would not have any adverse impacts on the ambient air quality in the vicinity of the project, and would comply with all National Ambient Air Quality Standards.

The proposal to construct and operate the Boise Cascade facility was made after the Satsop CT Project received approval for construction and operation from EFSEC and the Governor of Washington State in 1996. In addition to applicable state and federal requirements, any industrial development at the Satsop Development Park must be performed in accordance with the charter and requirements of the Gray's Harbor PDA. Under the requirements of this charter, Boise Cascade Corporation did collect one years worth of available background ambient air quality data, included the emissions from the permitted Satsop CT Project, and used this data in it's submittal for a Notice of Construction (NOC) permit to the Olympic Air Pollution Control Authority (OAPCA). Because the emissions of the Boise Cascade project were less than the thresholds established by EPA to distinguish between major sources and minor sources, the Boise Cascade proposal was not required to undergo PSD review. OAPCA has since issued a final approval for the Boise Cascade NOC[3].

Finally, according to the Boise Cascade analysis submitted to OAPCA, a comparison of the dispersion of emissions from the Satsop CT Project and the Boise Cascade facility indicated that, although the two facilities are located near each other, they will not impact the surrounding area equally. The stack configurations at the two facilities are vastly different and as such, the impacts occur in different places. Impacts from the Boise Cascade facility occur closer to the Satsop Development Park, whereas the impacts from the Satsop CT facility occur at a much greater distance, because of the higher Satsop CT stacks, and greater effect of emission dispersion.

3.5 Consideration of "Significant Emission Rate Thresholds" and how significant ambient air quality impacts are assessed in the PSD Permitting Process (Martinez/Jones, Rudrud)

Section 169 of the Federal Clean Air Act specifically lists 28 source categories that merit attention under the Prevention of Significant Deterioration program. When such a source emits, or has the potential to emit, 100 tons per year (tpy) or more of any of the criteria pollutants regulated by the Clean Air Act, the source is classified as "major" and must undergo review under the Prevention of Significant Deterioration (PSD) program. As it applies to the 28 source categories, the 100 tpy criteria is defined as the "significant emission rate threshold". These thresholds have been established by EPA to distinguish between major sources that must undergo PSD review, and minor sources that do not. The Satsop CT Project is subject to PSD review, because it falls under one of the 28 listed category sources, and because it has the potential to emit in excess of 100 tpy of nitrogen oxides (NOx), particulate matter, and carbon monoxide (CO).

Once it has been established whether or not a facility undergoes PSD review, it must be determined whether the facility will have any *significant impacts*. EPA has established specific thresholds to determine whether a facility has the potential to impact the surrounding environment. These specific thresholds are called "significant impact levels". The significant impact level is typically 1% of the

[3] March 22, 2001, Olympic Air Pollution Control Authority, Boise Cascade Corporation, Notice of Construction Final Approval, Construction of recycled wood/plastics composite manufacturing facility.

National Ambient Air Quality Standard (NAAQS) for the criteria pollutant under consideration and is expressed as a pollutant concentration (in micrograms per cubic meter) rather than a pollutant emission rate (i.e. tons per year). In addition, NAAQS have been established to be protective of human health and the environment.

To comply with the requirements of the PSD program, the Satsop CT Project had to demonstrate that it's impacts were less than the "significant impact levels". The Satsop CT Project application had to show that:

1. Computer- based dispersion modeling techniques were applied to simulate criteria and toxic air pollutant releases from the Satsop CT Project to assess compliance with the National and Washington Ambient Air Quality Standards, and Ecology's acceptable significant impact levels (ASILs) for toxic air pollutants.
2. Emissions from the source will not adversely impact the soils and vegetation in the area.
3. Emissions from the source will not result in exceedance of PSD increments in Class I and Class II areas, and will not deteriorate the air quality in an "attainment" area.
4. The National Visibility impacts were evaluated for Class I and other special federally managed areas that receive special attention (National Parks, and the Columbia River Gorge National Scenic Area for example).

In summary, the Satsop CT Project has provided ambient impact analysis indicating that all regulated pollutant emissions are far below national and state ambient air quality standards established to protect human heath and welfare, and no significant ambient air quality impact will result from the construction and operation of this project.

3.6 Consideration of water vapor emissions and droplet deposition (Martinez/Jones, Holt)

The Satsop CT project will have several sources of water that will result in water vapor emissions. These sources include:

1) Moisture in the natural gas that is combusted, and moisture in the aqueous ammonia that is used to control nitrogen oxides, that is emitted from the Heat Recovery Steam Generator (HRSG) stacks of the facility;
2) Water vapor that is emitted from the combustion of natural gas in the auxiliary boiler, and
3) Water vapor that is emitted from the cooling towers. While the cooling towers utilize drift eliminators to restrict drift droplets, a water vapor plume will be present at times. Typically the plume can range in size up to 40 – 50 meters in length.

The water vapor emitted through any of these sources poses no adverse impact to the environment, nor to human health.

Most water will be emitted when the plant is operated at full load with all duct burners fired. The emissions from the three sources listed above will be:

1) HRSG exhaust stack: 238,000 lb/hr or 118 tons/hr,
2) Auxiliary boiler water vapor emissions: 3,100 lb/hr or 1.5 tons/hr, and
3) Cooling Tower water vapor emissions: 1,624.000 lb/hr or 812 tons/hr, and Cooling Tower Drift droplets: 4,000 lb/hr.

Some particulate matter will be emitted in the cooling tower drift droplets, at a rate of 1.03 lbs/hr (4.51 tons per year). These particulate emissions were included and analyzed in the permit application, and are included in the total particulate matter emissions reflected in the permit conditions. It was determined that these particulate emissions pose no threat to human health, welfare, or the environment.

3.7 Impacts on visibility of Class II areas (Martinez/Jones)

As explained in the fact sheet issued with the preliminary approval:

> "The United States Environmental Protection Agency (EPA) and the Washington Department of Ecology (Ecology) have established national and state ambient air quality standards (NAAQS and WAAQS, respectively). "Primary" standards apply to populated areas (Class II areas), and are designed to protect human health and safety. "Secondary" standards apply to sensitive areas (Class I areas), and are designed to protect soils and vegetation. The proposed project is required to evaluate potential visibility impairment to Class I areas located within a radius of 100 miles from the new source. Class I areas include National Parks and Wilderness Areas, which are areas where air quality is afforded a higher degree of protection than other areas. Four Class I areas fall within a 100 miles radius of the proposed site: Olympic National Park, Mt. Rainier National Park, Goat Rocks Wilderness Area, and Alpine Lakes Wilderness Area, all of which are in the State of Washington."

Although not required by regulation, both Class II "areas of interest " as well as Class I Areas were analyzed in the Satsop CT application for regional haze (visibility). In Washington State, those areas not classified as Class I are considered Class II. The figures provided in the NOC/PSD application show the extinction coefficient contours for the entire modeling domain, including Class II areas in the vicinity of the plant site. This information was therefore disclosed to the public.

3.8 Compliance monitoring (Martinez/Jones, Rudrud, Holt)

In order to demonstrate compliance with the permit conditions, the permittee is required to install continuous monitoring system (CEM) to collect instantaneous data, or to perform stack testing at a predetermined frequency. The frequency of any particular testing of any pollutant is determined by specific state and federal testing requirements. The testing frequencies outlined in this permit meet all state and federal testing requirements, are the same as the requirements imposed on similar facilities of this type in Washington State, and they are more than adequate to assess the compliance of the Satsop CT Project with the NOC/PSD permit conditions. EFSEC and EPA have jurisdiction to enforce compliance with all permit conditions.

The applicant is required to install, calibrate, maintain, and operate continuous emissions monitors (CEM) at each PGU exhaust stack for the monitoring of nitrogen oxide, carbon monoxide, oxygen and ammonia on continuous basis, 365 days a year with an automated data acquisition and handling system. The data will be reported to EFSEC and EPA within thirty days of the end of each calendar month for compliance purposes. EFSEC and EPA can require the permittee to conduct source testing by an independent testing firm to demonstrate compliance with the permit conditions. EFSEC and EPA have the right to participate and oversee the source testing efforts. EFSEC and EPA will review all tests results.

The draft permit does not require the installation and operation of an ambient air quality monitor. The Olympic Air Pollution Control Authority (OAPCA) monitors the surrounding air quality, also called "ambient air quality". The nearest OAPCA ambient air quality monitoring station is located in Lacey, Washington.

3.9 *Decreased electrical rates for Grays Harbor residents as mitigation for state and federally regulated air emissions (Franklin)*

The Prevention of Significant Deterioration program focuses only on the regulation of emissions of criteria pollutants as required by the Federal Clean Air Act. The Notice of Construction portion of the permit focuses on the regulation of air emissions as required by Washington State. The issuance of any NOC/PSD permit in Washington State can therefore not require the mitigation of regulated air emissions by controlling electrical rates for local citizens.

When the Satsop CT Project was first certified by EFSEC and the Governor of Washington State in 1996, EFSEC did complete a comprehensive review of all of the potential impacts of the proposal, including socio-economic impacts to the citizens of Grays Harbor County, and the conditions of sale of the electricity to be produced by the Satsop CT Project. In the Site Certification Agreement issued to Energy Northwest and Duke Energy Grays Harbor the Council did impose conditions on the sales of electricity from the Satsop CT project, and these conditions are still binding on Energy Northwest and Duke Energy Grays Harbor.

3.10 *Deposition of nitrogen and ammonia, and impacts on salmon in the Chehalis River (Rudrud)*

The total primary particulate emissions are about 3 g/s for each PGU of which only a small amount will be ammonia nitrate or ammonium sulfate. The project complies with the previsions of Title IV of the Clean Air Act Amendments of 1990 (Acid Rain Program). Deposition modeling was not performed specifically for the Chehalis River, as this type of modeling is only required for Class I Areas (see response 3.7 for more information about Class I and Class II areas). However, the figures, information and analyses provided in the PSD application show the deposition contours for the entire modeling domain, including those areas in the vicinity of the Satsop CT Project, and the Chehalis River.

3.11 *Protection of ground water and Chehalis River water resources from ammonia spills (Rudrud)*

The protection of ground water and Chehalis River water resources from ammonia spills was analyzed when the Satsop CT Project was certified by EFSEC in 1996. In addition, the Satsop CT Project submitted a Spill Prevention and Countermeasures Plan to EFSEC in June 2001. The aqueous ammonia tank will be stored on level storage area surrounded by a leak proof dike sized to contain 110% of the volume of the tank. The dike will be constructed with materials compatible with the aqueous ammonia being stored. The Satsop CT Project is required to prevent and counteract spills in accordance with all applicable state and federal regulations.

3.12 *Coordination of PSD permitting and permitting of similar sources by federal, state and local agencies (Schwickerath)*

Currently EFSEC contracts with the Department of Ecology's Air Quality program to review PSD and other air quality permit applications for facilities under EFSEC jurisdiction. The Ecology Air Quality Program also reviews and processes PSD permit applications and develops permits for all non-EFSEC PSD projects in Washington.

As part of the application development process, each applicant is required to review the emission limitations and requirements that have been issued for similar facilities within the entire United States. When Ecology reviews applications, they also review permit limitations and approval conditions for other projects, including projects that do not appear in the applicants listing and evaluation. Ecology also coordinates permit requirements with those issued by nearby states, and local air pollution agencies. The EPA is required to review both the permit applications and the draft permit. The purpose of EPA's review is to assure national consistency in permit decisions and requirements. During the application review and public notice process, the National Park Service, the US Forest Service, local government, local Indian Tribes, and if the project is close enough to affect another state, the adjacent state have the opportunity to review the application materials and the proposed permit.

After all of these reviews by other agencies, the resulting draft permit reflects their concerns on the project and contains emission limitations and monitoring requirements that are consistent with national precedence, state law and regulation, and Washington permitting practices.

3.13 Impact of air emissions during stagnant winter meteorological conditions (Schwickerath)

The ambient air impact modeling analyses use meteorological data collected at the site for one year. This data includes winter conditions. No impacts were predicted in excess of significant impact levels established by EPA and the State of Washington during any part of the year.

3.14 Consideration of plume and dispersion modeling in the PSD permitting process (Holt)

The analysis required for issuance of the PSD permit did take into account modeling of the dispersion of the air emissions plume from the facility exhaust stacks. Ambient air quality impacts were assessed using dispersion models approved by EPA. The modeling and results were available for public review and inspection during the comment period.

3.15 Other Permit Changes

Approval Condition 14

Approval Condition 14 has been changed to reflect that a single 180 day period for compliance testing for the entire project begins when the first combustion turbine meets the definition of "Initial startup of a combustion turbine". This condition has been edited as follows:

"Within 180 days after initial start-up of ~~each~~ the first combustion turbine, Duke Energy shall conduct performance tests for NO_X, ammonia, SO_2, opacity, VOC, CO, PM_{10} and H_2SO_4 on each PGU and boiler, to be performed by an independent testing firm. A test plan shall be submitted to EFSEC for approval at least 30 days prior to the testing. Initial start-up for ~~each~~ a combustion turbine is defined as the time when the first electricity from ~~each~~ the PGU and the associated steam turbine generator is delivered to the electrical power grid."

Approval Condition 26

At the October 23, 2001, Special EFSEC Meeting when final action was taken on the permit, it was requested by Council that approval condition 26 be edited as follows:

"Duke Energy shall notify EFSEC in writing at least thirty days prior to initial start-up of the project."

This correction is warranted, and the final permit reflects the language above.

Permit Signature

On the signature page, Charles J. Carelli, Acting EFSEC Chair, has been replaced by James O. Luce, EFSEC Chair, as the authorized representative approving the permit on behalf of the Energy Facility Site Evaluation Council.